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Orange County Municipal Storm Water Permittees’ Drainage Area Management Plan (DAMP) Chapter 7 and Model Water Quality Management Plan (WQMP)

Changes Proposed by Staff to the July 22, 2003 Revised Draft Documents

Page Number	Changes
WQMP Page 7.II-1	<p>7.II - 1.0 INTRODUCTION</p> <p>The Model Water Quality Management Plan (Model WQMP) has been developed to address post-construction urban runoff and stormwater pollution from all new development and significant redevelopment projects. The goal for use of the Model WQMP is to achieve practicable and enforceable policies to minimize the effects of urbanization on <u>ensure that new development and significant redevelopment do not increase pollutant loads from a project site hydrology, or contribute to increased</u> urban runoff flow rates or velocities and pollutant loads. This goal may be achieved through <u>practicable and enforceable</u> site-specific project-based controls, or a combination of project-based and regionally<u>regional</u> or watershed-based controls.</p> <p>This Model WQMP identifies appropriate controls, commonly referred to as Best Management Practices (BMPs), for all applicable new development and significant redevelopment projects and that are subject to WQMP requirements pursuant to Section 7 of the Drainage Area Management Plan (DAMP). This includes both private and public agency projects. The Model WQMP will be reviewed and approved by the Santa Ana Regional Water Quality Control Board (Santa Ana Regional Board) in accordance with the relevant Third Term Permit (Order No. R9-2002-001) (“North County Permit”). The Santa Ana Regional Board will solicit public review and comment prior to approval. The San Diego Regional Water Quality Control Board will review the Model WQMP for compliance with the NPDES Permit (Order R9-2002-001). Permittees are required to adopt their own local WQMP (see DAMP, Appendix A-7) based on the Regional Board-approved Model WQMP and may adapt the Model WQMP for local conditions. The requirements apply to both private and public agency projects. Using the local<u>Model</u> WQMP as a guide, each Permittee<u>North County Permittees</u> will <u>review and</u> approve project-specific Water Quality Management Plans (Project WQMPs) as part of the development plan and entitlement approval process or the ministerial permit approval process for Priority and Non-Priority Projects as defined in DAMP Section 7.6 and Table 7.II-1.</p> <p><u>The San Diego Regional Water Quality Control Board (San Diego Regional Board) will review the Model WQMP for compliance with the relevant Third Term Permit (Order R9-2002-001) (“South County Permit”). South County Permittees are required to adopt their own local WQMP (see DAMP, Appendix A-7) based on the Model WQMP submitted to the San Diego Regional Board and may adapt the Model WQMP for local conditions. Using the local WQMP as a guide, each South County Permittee will review and approve Project WQMPs as part of the development plan and entitlement approval process or the ministerial permit approval process for Priority and Non-Priority Projects as defined in DAMP Section 7.6 and Table 7.II-1.</u></p>
WQMP Page 7.II-1	<ul style="list-style-type: none"> ■ Consideration of Site Design BMPs <u>(as appropriate)</u> ■ Incorporation of all applicable<u>Applicable</u> Source Control BMPs

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WQMP Page 7.II-1	<ul style="list-style-type: none">■ Incorporation of projectProject-based Treatment Control BMPs; and/ or participation in an approved regional or watershed management program as defined in Section 7-II.3.3.3 of this document in the affected watershed.																		
WQMP Page 7.II-2	<ul style="list-style-type: none">■ Non-Priority Projects (Section 7.II - 4.0)■ Non-Priority Projects (Section 7.II—4.0)																		
WQMP Page 7.II-2	<p>A project is a priority projectPriority Project if it meets any of the following criteria:</p> <p style="text-align: center;">Table 7.II-1 Priority Projects Categories</p> <table><tr><td>1.</td><td>Residential development of 10 units or more</td></tr><tr><td>2.</td><td>Commercial and industrial development greater than 100,000 square feet including parking area</td></tr><tr><td>3.</td><td>Automotive repair shops (SIC codes 5013, 5014, 5541, 7532-7534, and 7536-7539)</td></tr><tr><td>4.</td><td>Restaurants where the land area of development is 5,000 square feet or more including parking area (SIC code 5812)</td></tr><tr><td>5.</td><td><i>For San Diego Region</i> - Hillside development greater than 5,000 square feet <i>For Santa Ana Region</i> - Hillside developmentdevelopments on 10,000 square feet or more, which are located on areas with known erosive soil conditions or where natural slope is twenty-five percent or more</td></tr><tr><td>6.</td><td>Impervious surface of 2,500 square feet or more located within, directly adjacent to (within 200 feet), or discharging directly to receiving waters within Environmentally Sensitive Areas</td></tr><tr><td>7.</td><td>For San Diego Region - Parking Lots 5,000 square feet or more, or with 15 parking spaces or more, and potentially exposed to urban stormwater runoff. For Santa Ana Region - Parking lots of 5000 square feet or more exposed to stormwater.</td></tr><tr><td>8.</td><td><i>For San Diego Region</i> - Streets, roads, highways, and freeways which would create a new paved surface that is 5,000 square feet or greater</td></tr><tr><td>9.</td><td>For Santa Ana Region - All significant redevelopment projects, where significant redevelopment is defined as the addition of 5,000 or more square feet of impervious surface on an already developed site.</td></tr></table>	1.	Residential development of 10 units or more	2.	Commercial and industrial development greater than 100,000 square feet including parking area	3.	Automotive repair shops (SIC codes 5013, 5014, 5541, 7532-7534, and 7536-7539)	4.	Restaurants where the land area of development is 5,000 square feet or more including parking area (SIC code 5812)	5.	<i>For San Diego Region</i> - Hillside development greater than 5,000 square feet <i>For Santa Ana Region</i> - Hillside development developments on 10,000 square feet or more, which are located on areas with known erosive soil conditions or where natural slope is twenty-five percent or more	6.	Impervious surface of 2,500 square feet or more located within, directly adjacent to (within 200 feet), or discharging directly to receiving waters within Environmentally Sensitive Areas	7.	For San Diego Region - Parking Lots 5,000 square feet or more, or with 15 parking spaces or more, and potentially exposed to urban stormwater runoff. For Santa Ana Region - Parking lots of 5000 square feet or more exposed to stormwater.	8.	<i>For San Diego Region</i> - Streets, roads, highways, and freeways which would create a new paved surface that is 5,000 square feet or greater	9.	For Santa Ana Region - All significant redevelopment projects, where significant redevelopment is defined as the addition of 5,000 or more square feet of impervious surface on an already developed site.
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WQMP Page 7.II-2	All-priority The Project WQMP for all new development and significant redevelopment projects that are Priority Projects are required to:																		
WQMP Page 7.II-2	<ul style="list-style-type: none">■ ConsiderIncorporate and implement Site Design BMPs-where applicable and feasible, as appropriate, and document thosethe Site Design t BMPs that are included; and																		

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	<ul style="list-style-type: none"> Either <u>incorporate and</u> implement Treatment Control BMPs, <u>by</u> including a selection of such BMPs into the project design; or participate in or contribute to an acceptable regional or watershed management<u>based</u> program as defined in Section 7-II.3.3.3 of this document. Projects participating in a regional or watershed management program will also implement Source Control BMPs and Site Design BMPs consistent with the <u>requirements of the</u> approved program<u>regional or watershed-based plan</u>.
WQMP Page 7.II-3	<ul style="list-style-type: none"> The combination of Source Control, Site Design, and Treatment Control BMPs or regional or watershed <u>based</u> programs must adequately address all identified pollutants <u>and hydrologic conditions</u> of concern.
WQMP Page 7.II-3	<p>All Non-Priority Projects are required to:</p> <ul style="list-style-type: none"> Implement all Source Control BMPs (routine structural and routine non-structural) unless not applicable to the project due to project characteristics and document clearly why any applicable Source Control BMP was not included; and Consider and implement all Site Design BMPs where applicable and feasible. <p>In the instance where only a project feature falls into a priority project<u>Priority Project</u> category, such as a 6,000 sq. ft. parking lot for an industrial development that is less than 100,000 sq. ft., only the parking lot feature is subject to Model WQMP requirements.</p> <p><u>All Non-Priority Project WQMPs are required to:</u></p> <ul style="list-style-type: none"> <u>Incorporate and implement all Source Control BMPs (routine structural and routine non-structural), unless not applicable to the project due to project characteristics, and document clearly why any applicable Source Control BMP was not included; and</u> <u>Incorporate and implement Site Design BMPs, as appropriate.</u>
WQMP Page 7.II-3	<ul style="list-style-type: none"> For projects not participating in a regional or watershed <u>based</u> program, the Project WQMP must be completed either prior to discretionary project approval or ministerial permit, (grading or building) issuance for discretionary projects, and prior to ministerial permit issuance for projects requiring only these types of<u>ministerial</u> permits. For projects participating in regional or watershed <u>based</u> programs the regional or watershed program may be relied upon during the discretionary review process subject to a discussion of how the project will participate in the program, but a site specific Project WQMP must be completed prior to permit issuance. <p>Requirements of the Project WQMP shall be incorporated into project design and shown in the <u>project</u> plans <u>to be submitted to the Permittee</u>.</p> <p>Departments carrying out public agency projects that are not required to obtain permits shall be responsible for ensuring <u>that</u> Model WQMP requirements are incorporated into the project design and shown on the <u>project</u> plans prior to bidding for construction contracts, or equivalent<u>similar contracts</u>. Project WQMP requirements will be incorporated into the design of public agency projects and shown on the <u>project</u> plans before allowing the project to commence.</p>

Page Number	Changes
WQMP Page 7.II-5 Figure 7.II-1	<p style="text-align: center;">Figure 7.II-1</p> <p style="text-align: center;">Development Planning and WQMP Preparation Steps</p> <pre>graph TD; A[Is the Project a Priority Project?] -- Yes --> B[Conduct Site Assessment]; A -- No --> C[Incorporate Site Design BMPs As Appropriate]; B --> D[Identify Site-Specific and Targeted Watershed Pollutants]; D --> E[Consider BMP Approach]; E -- "Project Approach" --> F[Incorporate Site Design BMPs As Appropriate]; E -- "Regional Approach" --> G[Incorporate Site Design BMPs As Appropriate or Identify Site Design BMPs if Determined by Regional Approach]; F --> H[Identify Routine BMPs]; H --> I[Select and Size Treatment Control BMPs]; I --> J[Complete WQMP]; G --> K[Identify Routine BMPs]; K --> L[Describe How Regional Treatment Solution Fits into the Regional Master Plan]; L --> J; C --> J;</pre> <p>The flowchart illustrates the steps for WQMP preparation. It begins with a decision: 'Is the Project a Priority Project?'. If 'Yes', the process moves to 'Conduct Site Assessment', then 'Identify Site-Specific and Targeted Watershed Pollutants', followed by 'Consider BMP Approach'. From 'Consider BMP Approach', it branches into 'Project Approach' and 'Regional Approach'. The 'Project Approach' leads to 'Incorporate Site Design BMPs As Appropriate', then 'Identify Routine BMPs', then 'Select and Size Treatment Control BMPs', and finally 'Complete WQMP'. The 'Regional Approach' leads to 'Incorporate Site Design BMPs As Appropriate or Identify Site Design BMPs if Determined by Regional Approach', then 'Identify Routine BMPs', then 'Describe How Regional Treatment Solution Fits into the Regional Master Plan', and finally 'Complete WQMP'. If the initial decision is 'No', the process moves directly to 'Incorporate Site Design BMPs As Appropriate' and then 'Complete WQMP'.</p>
WQMP Page 7.II-6	<p>7.II - 3.0 PRIORITY PROJECT WQMP PREPARATION</p> <p>Priority new<u>New</u> development or<u>and</u> significant redevelopment projects <u>that are Priority Projects will</u> perform the following steps for Project WQMP preparation:</p>

Page Number	Changes
WQMP Page 7.II-6	<ul style="list-style-type: none"> ■ Consideration<u>Incorporation</u> of Site Design BMPs, <u>as appropriate</u> (Section 7.II - 3.3.1.) ■ Incorporation of Source Control BMPs, <u>as applicable</u> (Section 7.II - 3.3.2) ■ Selection of regional, <u>watershed</u> or project-based approach to Treatment Control BMPs (Section 7.II - 3.3.3)
WQMP Page 7.II-6	<ul style="list-style-type: none"> ■ Site characteristics, including description of site drainage and how it ties with drainage of surrounding property. Reference <u>to</u> the Project WQMP's Plot Plan showing drainage flow arrows and how drainage ties to drainage of surrounding property
WQMP Page 7.II-6	<p>7.II - 3.2 Identification of Pollutants and Hydrologic Conditions of Concern</p> <p>Priority project<u>Project</u> proponents shall use these guidelines to identify <u>expected</u> pollutants of concern from a development, potential pollutants of concern, and <u>hydrologic</u> conditions of concern for which they need<u>associated with the project that will be mitigated by the control measures to mitigate or protect against</u><u>be set forth in Project WQMP.</u> Once identified, appropriate<u>Appropriate</u> control measures for these<u>various</u> pollutants and <u>hydrologic</u> conditions <u>of concern</u> are specified in Section 7.II - 3.3.</p> <p>Site design and source control measures are based on<u>identified for</u> pollutants commonly associated with the proposed project land uses type<u>use</u> (see Table 7.II-2). The<u>A</u> combination of site design, source control and on-site treatment Control<u>control</u> BMPs or regional and watershed programs are also required <u>in order</u> to <u>fully</u> address a project's expected or potential pollutants <u>of concern and hydrologic conditions</u> of concern.</p>
WQMP Page 7.II-7	<ul style="list-style-type: none"> ■ Metals – Primary<u>The primary</u> source of metal pollution in stormwater are<u>is</u> typically commercially available metals and metal products. Metals of concern include cadmium, chromium, copper, lead, mercury, and zinc. Lead and chromium have been used as corrosion inhibitors in primer coatings and cooling tower systems metals. <u>Metals</u> are also raw material components in non-metal products such as fuels, adhesives, paints, and other coatings. At low concentrations naturally occurring in soil, metals are<u>may</u> not <u>be</u> toxic. However, at higher concentrations, certain metals can be toxic to aquatic life. Humans can be impacted from contaminated groundwater resources, and bioaccumulation of metals in fish and shellfish. Environmental concerns, regarding the potential for release of metals to the environment, have already led to restricted metal usage in certain applications.
WQMP Page 7.II-7	<ul style="list-style-type: none"> ■ Pesticides – Pesticides (including herbicides) are chemical compounds commonly used to control nuisance growth or prevalence of organisms. Excessive <u>or improper</u> application of a pesticide may result in runoff containing toxic levels of its active component<u>ingredient</u>.
WQMP Page 7.II-8 to 9	<p>7.II - 3.2.2 Identify Pollutants from the Project Area</p> <p>Using Table 7.II-2, identify pollutants that are anticipated to be generated, or have a potential to be generated<u>expected</u> from the proposed priority<u>Priority</u> project<u>Project</u> land use categories. Pollutants associated with any hazardous material sites that have been remediated or are not threatened by the proposed project are not considered a pollutant of concern. Site-specific conditions must also be considered as <u>additional</u><u>potential</u> pollutant sources, such as legacy pesticides or nutrients in site soils as a result of past agricultural practices <u>or hazardous materials in site soils from industrial uses.</u> <u>Hazardous material sites that have been remediated and do not pose a current threat, and will not pose a future threat, to stormwater quality, are not considered a pollutant of concern.</u></p>

Page Number	Changes
	<p><u>7.II - 3.2.3 Identify Pollutants of Concern</u></p> <p>To identify pollutants of concern in receiving waters, each priority projectPriority Project proponent shall, at a minimum, do the following:</p> <ol style="list-style-type: none"> 1. For For each of the proposed project discharge points, identify the receiving water for each point of discharge and all water bodies downstream of the receiving water, using hydrologic unit basin numbers as identified in the most recent version of the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) prepared by the State Water Resources Control Board; the Water Quality Control Plan for the Santa Ana Basin prepared by the Santa Ana Regional Water Quality Control Board; or the Water Quality Control Plan for the San Diego Basin¹, prepared by the San Diego Regional Water Quality Control Board.
WQMP Pages 7.II-9	<p>Primary Pollutants of Concern - Any pollutants identified by Table 7.II-2, whichthat have also been identified as causing impairment of project receiving waters</p> <p>Other Pollutants of Concern - Those pollutants identified using Table 7.II-2 whichthat have not been identified as causing impairment of project receiving waters.</p> <p>Further information on pollutants of concern may also be available from the CEQA analysis of the project (e.g., project-specific pollutant evaluations in Environmental Impact Reports) and this. This site-specific information should be used to supplement, or, in some cases where comprehensive scientific and engineering studies have been undertaken in the CEQA analysis, may supercede, the information in Table 7.II-2. Watershed planning documents should also be reviewed for identification of specific implementation requirements that address pollutants of concern.</p>

¹ http://www.swrcb.ca.gov/~rwqcb9/Programs/Planning_and_Services/SD_Basin/sd_basin.html

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WQMP Page 7.II-10 Table 7.II-2	<p>Table 7.II-2 Anticipated and Potential Pollutants Generated by Land Use Type</p> <table><tr><th rowspan="2">Priority Project Categories and/or Project Features</th><th colspan="9">General Pollutant Categories</th></tr><tr><th>Bacteria/Virus</th><th>Heavy Metals</th><th>Nutrients</th><th>Pesticides</th><th>Organic Compounds</th><th>Sediments</th><th>Trash & Debris</th><th>Oxygen Demanding Substances</th><th>Oil & Grease</th></tr><tr><td>Detached Residential Development</td><td>X</td><td></td><td>X</td><td>X</td><td></td><td>X</td><td>X</td><td>X</td><td>X</td></tr><tr><td>Attached Residential Development</td><td>P</td><td></td><td>X</td><td>X</td><td></td><td>X</td><td>X</td><td>P⁽¹⁾</td><td>P⁽²⁾</td></tr><tr><td>Commercial/ Industrial Development >100,000 ft²</td><td>P⁽³⁾</td><td><u>P</u></td><td>P⁽¹⁾</td><td>P⁽¹⁾</td><td>P^(2,5)</td><td>P⁽¹⁾</td><td>X</td><td>P⁽¹⁾</td><td>X</td></tr><tr><td>Automotive Repair Shops</td><td></td><td>X<u>P</u></td><td></td><td></td><td>X^(4,5)</td><td></td><td>X</td><td></td><td>X</td></tr><tr><td>Restaurants</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td>X</td><td>X</td><td>X</td></tr><tr><td>Hillside Development >5,000 ft² In SDRWQCB</td><td><u>X</u></td><td></td><td>X</td><td>X</td><td></td><td>X</td><td>X</td><td>X</td><td>X</td></tr><tr><td>Hillside Development >10,000 ft² In SARWQCB</td><td><u>X</u></td><td></td><td>X</td><td>X</td><td></td><td>X</td><td>X</td><td>X</td><td>X</td></tr><tr><td>Parking Lots</td><td><u>P⁽⁶⁾</u></td><td>X</td><td>P⁽¹⁾</td><td>P⁽¹⁾</td><td><u>X⁽⁴⁾</u></td><td>P⁽¹⁾</td><td>X</td><td>P⁽¹⁾</td><td>X</td></tr><tr><td>Streets, Highways & Freeways</td><td><u>P⁽⁶⁾</u></td><td>X</td><td>P⁽¹⁾</td><td>P⁽¹⁾</td><td>X⁽⁴⁾</td><td>X</td><td>X</td><td>P⁽¹⁾</td><td>X</td></tr></table> <div><div>X = anticipated. P = potential (1) A potential pollutant if landscaping or open area exist on-site. (2) A potential pollutant if the project includes uncovered parking areas.</div><div>(3) A potential pollutant if land use involves food or animal waste products. (4) Including petroleum hydrocarbons. (5) Including solvents. (6) <u>Analyses of pavement runoff routinely exhibit bacterial indicators.</u></div></div>	Priority Project Categories and/or Project Features	General Pollutant Categories									Bacteria/Virus	Heavy Metals	Nutrients	Pesticides	Organic Compounds	Sediments	Trash & Debris	Oxygen Demanding Substances	Oil & Grease	Detached Residential Development	X		X	X		X	X	X	X	Attached Residential Development	P		X	X		X	X	P ⁽¹⁾	P ⁽²⁾	Commercial/ Industrial Development >100,000 ft ²	P ⁽³⁾	<u>P</u>	P ⁽¹⁾	P ⁽¹⁾	P ^(2,5)	P ⁽¹⁾	X	P ⁽¹⁾	X	Automotive Repair Shops		X <u>P</u>			X ^(4,5)		X		X	Restaurants	X						X	X	X	Hillside Development >5,000 ft ² In SDRWQCB	<u>X</u>		X	X		X	X	X	X	Hillside Development >10,000 ft ² In SARWQCB	<u>X</u>		X	X		X	X	X	X	Parking Lots	<u>P⁽⁶⁾</u>	X	P ⁽¹⁾	P ⁽¹⁾	<u>X⁽⁴⁾</u>	P ⁽¹⁾	X	P ⁽¹⁾	X	Streets, Highways & Freeways	<u>P⁽⁶⁾</u>	X	P ⁽¹⁾	P ⁽¹⁾	X ⁽⁴⁾	X	X	P ⁽¹⁾	X
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WQMP Page 7.II-11 Table 7.II-3	<table><tr><th colspan="11">Table 7.II-3 Summary of the 2002 303(d) Listed Water Bodies and Associated Pollutants of Concern for Orange County*</th></tr><tr><th rowspan="2">Region</th><th rowspan="2">Water Body</th><th rowspan="2">Watershed</th><th colspan="8">Pollutant</th></tr><tr><th>Bacteria Indicators/ Pathogens</th><th>Metals</th><th>Nutrient s</th><th>Pesticid es</th><th>Toxicity</th><th>Trash</th><th>Salinity/ TDS/ Chlorid es</th><th>Turbidit y</th></tr><tr><td rowspan="14">Region 8 Santa Ana</td><td>Anaheim Bay</td><td>C</td><td></td><td>X</td><td></td><td>X</td><td></td><td></td><td></td><td></td></tr><tr><td>Bolsa Chica</td><td></td><td></td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Buck Gully Creek</td><td>H</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Huntington Beach State 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WQMP Page 7.II-12	A change to a priority project <u>Priority Project</u> site’s hydrologic regime would be considered a condition of concern if the change would have a significant impact on downstream natural channels and habitat integrity. <u>In determining whether an impact is significant, the cumulative effects on the watershed must be considered.</u> Because of these potential impacts, the following steps shall be followed by each priority <u>Priority project</u> <u>Project</u> :																																																																																																																																																																																																																																																																																										
WQMP	3. Review watershed plans, drainage area master plans or other planning documents to the extent available to identify if any specific																																																																																																																																																																																																																																																																																										

Page Number	Changes
Page 7.II-12	implementation BMP requirements for new development exist that address hydrologic conditions of concern <u>cumulative inputs from development in the watershed.</u>
WQMP Page 7.II-13	At a minimum, Priority Projects must implement <u>applicable</u> Source Control BMPs (routine non-structural and routine structural) <u>, Site Design BMPs, as appropriate</u> and must implement Treatment Control BMPs (<u>and/or</u> participate in a regional or watershed program) unless a waiver is granted based on the infeasibility of all Treatment Control BMPs as discussed in Section 7.II – 6.0. BMPs must also achieve the performance standards set out in Section 3.3.4 . Upon completion, for Public Agency projects will become subject to the Municipal Activities Program. Therefore it is not necessary to identify routine non-structural BMPs in the WQMP <u>for Public Agency projects</u> provided that such BMPs already <u>have</u> been identified as part of the Municipal Activities Program (see DAMP Section 5).
WQMP Page 7.II-14	Priority Projects shall be designed to minimize the introduction of pollutants that may result in significant impacts, generated from site runoff to the municipal storm drain system through a combination of BMPs that may include <u>, including</u> , Site Design <u>BMPs, as appropriate</u> , Source Control <u>BMPs, as applicable</u> , and Treatment Control BMPs <u>and/or participation in regional or watershed program</u> . Priority Projects for which hydrologic conditions of concern have been identified shall also control post-development peak stormwater runoff discharge rates and velocities to maintain or reduce pre-development downstream erosion rates and to protect stream habitat. Priority Projects can address these objectives by considering the incorporation <u>of appropriate</u> Site Design BMPs that are intended to create a hydrologically functional project design that attempts to mimic the natural hydrologic regime. Mimicking a site’s natural hydrologic regime can be pursued by:
WQMP Page 7.II-16	<ol style="list-style-type: none"> 1. Minimize impervious footprint. This can be achieved in various ways, including, but not limited to increasing building density (number of stories above or below ground) and developing land use regulations seeking to limit impervious surfaces. Decreasing the project’s footprint can substantially reduce the project’s impacts to water quality and hydrologic conditions, <u>provided that the undeveloped area remains open space.</u> 2. Conserve natural areas. This can be achieved by concentrating or clustering development on the least environmentally sensitive portions of a site while leaving the remaining land in a natural, undisturbed condition. Where available, permittees should also refer to their Multiple Species Conservation Plans or other biological regulations, as appropriate to assist in determining sensitive portions of the site. <u>Sensitive areas can include: areas necessary to maintain the viability of wildlife corridors, occupied habitat of sensitive species and all wetlands, and coastal scrub and other upland communities.</u> Within each of the previous categories, areas containing hillsides (as defined in this Model WQMP) should be considered more sensitive than the same category without hillsides.
WQMP Page 7.II-16	8. Use natural drainage systems if feasible <u>to the maximum extent practicable.</u>

WQMP Page 7.II-16 to 17	<p>DESIGN CONCEPT 2: MINIMIZE DIRECTLY CONNECTED IMPERVIOUS AREAS (DCIAs)</p> <p>Priority Projects shall consider and incorporate the following design characteristics, where determined applicable and feasible and with <u>as appropriate, and incorporate</u> any Site Design BMPs included in an applicable any regional or watershed program <u>that the project relies upon for Treatment Control BMPs</u>.</p>
WQMP Page 7.II-18	<p>7.II - 3.3.2 <u>Source Control BMPs</u></p> <p>The following Source Control BMPs (routine non-structural BMPs, routine structural BMPs and BMPs for individual categories/project features) are required within all new development and significant redevelopment projects regardless of their priority, including <u>those identified in</u> an applicable regional or watershed program, unless they do not apply due to the project characteristics. If any of the following Source Control BMP that would otherwise apply to the project is <u>BMPs are</u> not included in the project, an explanation of why must be included in the Project WQMP or the <u>applicable</u> regional or watershed program.</p>
WQMP Page 7.II-19	<p>Compliance with Title 22 of the California Code of Regulations and relevant sections of the California Health & Safety Code regarding hazardous waste management shall be enforced by County Environmental Health on behalf of the State. The Project WQMP must describe how the development will comply with the applicable <u>hazardous waste management</u> section(s) of Title 22.</p>
WQMP Page 7.II-19	<p>Compliance with Permittee ordinances typically enforced by respective fire protection agency for the management of hazardous materials. The Orange County, health care agencies, and/or other appropriate agencies (i.e. Department of Toxics Substances Control or Agricultural Department) are typically responsible for enforcing hazardous <u>materials and hazardous</u> waste handling and disposal regulations.</p> <p>■ <i>N10 Uniform Fire Code Implementation</i></p>
WQMP Page 7.II-20	<p>■ <i>N13 Housekeeping of Loading Docks</i></p> <p>Loading docks typically found at large retail and warehouse-type commercial and industrial facilities shall be kept in a clean and orderly condition through a regular program of sweeping and litter control and immediate cleanup of spills and broken containers. Cleanup procedures should minimize or eliminate the use of water. If washdown water is used, it must be at disposed of in an approved manner and not discharged to the storm drain system. If there are no other alternatives, discharge of non-stormwater flow to the sanitary sewer may be considered only if allowed by the local sewerage agency through a permitted connection.</p>
WQMP Pages 7.II-20	<p>■ <i>N14 Common Area Catch Basin Inspection</i></p> <p>For industrial/commercial developments and for developments with privately maintained drainage systems, the owner is required to have at least 80 percent of drainage facilities inspected, cleaned and maintained on an annual basis with 100 percent of the facilities included in a two-year period {cleaned}. <u>Cleaning should take place in the late summer/early fall</u> prior to the storm <u>start of the rainy</u> season, no later than October 15th each year. Drainage facilities include catch basins (storm drain inlets) detention basins, retention basins, sediment basins, open</p>

	drainage channels and lift stations.																																																																																												
WQMP Page 7.II-23	4. Stabilize Install permanent stabilization BMPs on disturbed slopes as quickly as possible.																																																																																												
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WQMP Page 7.II-24	<p>INCORPORATE REQUIREMENTS APPLICABLE TO INDIVIDUAL PROJECT FEATURES:</p> <p>All projects, regardless of priority, shall adhere to each of the individual project category requirements that apply to the project (e.g., a restaurant would be required to incorporate the requirements for Equipment Wash Areas into the project design). Where identified in Table 7.II-4, the following requirements shall be incorporated into applicable priority projectsPriority Projects.</p>																																																																																												
WQMP Page 7.II-25 Table 7.II-4	<p style="text-align: center;">Table 7.II-4 Source Control and Site Design Stormwater BMP Selection Matrix</p> <table> <tr> <th rowspan="2"></th><th rowspan="2"></th><th colspan="9">Requirements Applicable to Individual Project Features (or Priority Project Categories) ⁽²⁾</th><th>Site Design</th></tr> <tr> <th>Loading Dock Areas</th><th>Maintenance Bays</th><th>Vehicle Wash Areas</th><th>Outdoor Processing Areas</th><th>Equipment Wash Areas</th><th>Fueling Areas</th><th>Hillside Landscaping</th><th>Washwater Controls</th><th>Community Car Wash</th><th></th></tr> <tr> <td>Detached Residential</td><td>R</td><td></td><td></td><td></td><td></td><td></td><td></td><td>R</td><td></td><td></td><td>C</td></tr> <tr> <td>Development Attached Residential</td><td>R</td><td></td><td></td><td>R</td><td></td><td></td><td></td><td>R</td><td></td><td>R</td><td>C</td></tr> <tr> <td>Development Commercial/Industrial</td><td>R</td><td>R</td><td>R</td><td>R</td><td>R</td><td>R</td><td>R</td><td>R</td><td>R</td><td></td><td>C</td></tr> <tr> <td>Automotive Repair Shop</td><td>R</td><td>R</td><td>R</td><td>R</td><td></td><td>R</td><td>R</td><td></td><td></td><td></td><td>C</td></tr> <tr> <td>Restaurants</td><td>R</td><td>R</td><td></td><td></td><td></td><td>R</td><td></td><td>R</td><td>R</td><td></td><td>C</td></tr> </table>													Requirements Applicable to Individual Project Features (or Priority Project Categories) ⁽²⁾									Site Design	Loading Dock Areas	Maintenance Bays	Vehicle Wash Areas	Outdoor Processing Areas	Equipment Wash Areas	Fueling Areas	Hillside Landscaping	Washwater Controls	Community Car Wash		Detached Residential	R							R			C	Development Attached Residential	R			R				R		R	C	Development Commercial/Industrial	R	R	R	R	R	R	R	R	R		C	Automotive Repair Shop	R	R	R	R		R	R				C	Restaurants	R	R				R		R	R		C
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	<p><u>5.4.</u> Other features which are comparable and equally effective <u>features</u> that prevent unpermitted discharges, to the municipal storm drain system.</p>
WQMP Page 7.II-27	<p>1. Cover or enclose areas that would be the sources of pollutants; or, slope the area toward a sump that will provide infiltration or evaporation with no discharge; or, if there are no other alternatives, discharge of non-stormwater flow to the sanitary sewer may be considered only <u>when</u> allowed by the local sewerage agency through permitted connection</p>
WQMP Page 7.II-27	<p>4. Other features which are comparable or equally effective, <u>features</u> that prevent unpermitted discharges to the municipal storm drain system.</p>
WQMP Page 7.II-27 to 28	<p>2. Be equipped with a clarifier, grease trap or other pretreatment facility, as appropriate and discharge <u>Design an equipment wash area drainage system to capture all wash water. Provide impermeable berms, drop inlets, trench catch basins, or overflow containment structures around equipment wash areas to prevent wash-down waters from entering the storm drain system. Connect drains to a sump for collection and disposal. Discharge from equipment wash areas to the municipal storm drain system is prohibited.</u> If there are no other alternatives, discharge of non-stormwater flow to the sanitary sewer may be considered, <u>but</u> only <u>when</u> allowed by the local sewerage agency through <u>a</u> permitted connection to a sanitary sewer, through an approved connection.</p> <p>3. Other features which are comparable or equally effective <u>features</u> that prevent unpermitted discharges to the municipal storm drain system.</p>
WQMP Pages 7.II-29 to 31	<p><u>7.II - 3.3.3 Selection of Regional or Project-Based Approach to Treatment Control BMPs</u></p> <p>Regional and/or watershed management programs that address runoff from New Development/Significant Redevelopment <u>new development/significant redevelopment</u> are encouraged to be considered as alternatives to Project WQMPs within the Santa Ana Regional Board permit area. Under certain conditions within the San Diego Regional Board permit area, offsite controls can also be considered. It is anticipated that individual or groups of Permittees will approve regional <u>Regional</u> or watershed programs that will plan to incorporate Treatment Control BMPs to support new development or significant redevelopment projects must be utilized within their respective jurisdictions <u>approved by each Permittee utilizing the program.</u> Regional or watershed programs are meant to provide comprehensive water quality solutions for the new development or significant projects they are meant to serve <u>as well as providing opportunities to address other watershed needs and runoff from existing developed areas.</u> To this end, all BMPs applicable to individual projects served by the approved regional or watershed program as well as details of applicable Site Design BMPs and offsite (as well as any on-site) Treatment Control BMPs will be predetermined in the approved regional or watershed program</p> <p>A <u>new development /significant redevelopment</u> project may be approved based upon reliance on <u>the Treatment Control BMPs contained in a Regional/regional or Watershed Program approach/watershed program</u> if the following criteria are met:</p> <ul style="list-style-type: none"> ■ The project incorporates all appropriate routine Source Control BMPs and any applicable Site Design BMPs <u>identified in the regional or watershed plan as applicable to or appropriate for individual projects participating in the plan.</u>

- One or more Permittees (or, in some cases another agency) has prepared a regional or watershed plan to determine where on-site and/or regional or watershed Treatment Control BMP facilities are appropriate and it has been approved by each Permittee intending to utilize the Treatment Control BMP facilities as part of the new development/significant redevelopment program. During the Third Term Permit, the Executive Officer must make a determination that the regional or watershed treatment BMP exceeds the water quality solution provided by the onsite structural BMPs otherwise required by section XII B 3 of the Permit. The Executive Officer may make this determination through comment on a CEQA document or through a 401 certification prepared for the regional or watershed treatment BMP. If no 401 Certification is required for the project or the Regional Board has not made an express finding during CEQA review that the regional or watershed treatment control BMP exceeds the water quality solution provided by the onsite structural BMPs otherwise required by section XII B 3 of the Permit, the Executive Officer must make an independent determination.
 - When it is determined by the Permittees that on-site facilities for individual projects are necessary, each Permittee would either define the performance standards to be consistent with or more stringent than this Model WQMP.
 - When regional or watershed Treatment Control BMPs are determined to be most practical, a developer may need to construct these facilities (for larger development projects), or pay a share of the costs of these facilities through an equitable fee-in-lieu-of method.
 - The regional or watershed Treatment Control BMPs must be sized and selected to meet the following criteria:
 - ~~■~~ The regional program incorporates or watershed Treatment Control BMP(s) collectively must have the capacity to treat at a minimum more than the cumulative volume (or flow for the water quality design storm for the rate) of runoff from the project and other all new development or significant redevelopment projects served included by in the regional or watershed BMP(s) as determined by plan, calculated using the planning for the regional/watershed program applicable project-based water quality design volume or flow rate from each project. The water quality design storm runoff volume or flow rate obligation for project projects participation participating in the regional/ or watershed program may be reduced based on the incorporation of any Site Design BMPs that offset treatment requirements for pollutants of concern.
 - Treatment Control BMP selection will be determined as part of the regional or watershed program planning. Regional or watershed Treatment Control BMPs must be selected to address pollutants of concern in the downstream receiving waters and anticipated to be generated from the type of new development or significant redevelopment within the watershed in accordance with the selection procedures in Section 3.3.4. In the alternative, an individual project may be required to incorporate site-specific BMPs to address any specific pollutant of concern from that project that is not addressed by the regional or watershed Treatment Control BMPs.
 - The regional or watershed Treatment Control BMPs should be sized consistent with site constraints and opportunities with the goal of treating runoff volume (or flow rate) from developed areas of the watershed in addition to the new development or significant redevelopment.
- The BMPs in a regional or watershed program with impaired waterbodies and/or watersheds subject to Total Maximum Daily Loads are to

	<p><u>address the applicable implementation requirements of any adopted TMDLs and make reasonable further progress toward attainment of water quality objectives in the impaired waterbodies.</u></p> <ul style="list-style-type: none"> ■ An<u>The regional or watershed plan must contain an</u> implementation plan is identified including component that includes funding mechanisms, timing, ability to implement schedules and <u>identification of</u> responsible parties <u>for design, construction, long-term operation and maintenance, and administration of the program including financing.</u> The implementation plan can rely on an adopted Regional/Watershed Master Plan. If a project is in a watershed where a Regional/Watershed Program can be considered or has already been adopted, the Project WQMP will describe or reference the Regional/Watershed Program<u>regional or watershed plan</u> and describe how the project will participate in or contribute to the program. The implementation plan<u>component</u> will also identify an appropriate level of either project-specific monitoring or coordination with regional monitoring programs. ■ One or more Permittees may have conducted and adopted a master plan to determine where on-site and community-wide facilities are appropriate. Where it is determined by the Permittees that on-site facilities are necessary, each Permittee would either define the performance standards to be consistent with or more stringent than this Model WQMP. When regional /watershed treatment controls are determined to be most practical, the developer may need to construct these facilities (for larger development projects), or pay a share of these facilities' cost through an equitable fee in lieu of method. It is therefore important to establish an overall performance standard to allow the developer to select the appropriate Treatment Control BMPs given site conditions, costs, and performance.<u>Participation of a project in a regional or watershed program may be approved provided construction of the regional or watershed structural Treatment Control BMP(s) is completed (or an equivalent temporary alternative is put in place) prior to the post-construction use of the regional/watershed BMP by the new development or significant redevelopment project being approved. The regional or watershed BMPs shall only be required to have capacity to treat the dependent developments or phases of development that are in use. Interim project-based stormwater BMPs that provide equivalent or greater treatment than is required by the Model WQMP may be implemented until each regional or watershed Treatment Control BMP is operational. If interim BMPs are selected, the BMPs shall remain in use until permanent BMPs are operational.</u>
WQMP Page 7.II-32	<p>Construction Timing</p> <p>Participation in a regional or watershed program may be approved provided construction of the regional/watershed structural Treatment Control BMP is completed (or an equivalent temporary alternative is put in place) prior to the post-construction use of the regional/watershed BMP by the new development or significant redevelopment project being approved. The regional/watershed BMPs shall only be required to have capacity to treat the dependent developments or phases of development that are in use.</p> <p>Interim stormwater BMPs that provide equivalent or greater treatment than is required by the Model WQMP may be implemented until each regional/watershed Treatment Control BMP is operational. If interim BMPs are selected, the BMPs shall remain in use until permanent BMPs are operational.</p>
WQMP Pages 7.II-32	<p><u>7.II - 3.3.4 Treatment Control BMPs</u></p> <p>Minimizing a development's detrimental effects on water quality can be most effectively achieved using a combination of Site Design, Source Control and Treatment Control BMPs. Where projects have been designed to <u>eliminate or</u> reduce, the introduction of anticipated<u>expected</u> pollutants of concern that may result in significant impacts to<u>into the municipal storm drain system or</u> the receiving waters through the implementation of Site Design and Source Control stormwater BMPs, the development may still have the potential for pollutants of concern to</p>

	enter the municipal storm drain system or receiving waters <u>that must be addressed by Treatment Control BMPs</u> .
WQMP Page 7.II- 33	<p>Where acceptable regional or watershed management programs are available within the downstream watershed to address the pollutants of concern from new development and significant redevelopment, a project may participate in a regional or watershed program provided the program meets the criteria discussed in Section 7.II - 3.3.3. Otherwise, Priority Projects shall be designed to remove pollutants of concern from the municipal storm drain system <u>to achieve the appropriate standard, as specified in the Third Term Permits</u>, through the incorporation and implementation of Treatment Control BMPs.</p> <p>In meeting<u>If on-site Treatment Control BMPs are necessary to meet</u> the requirements in this section, Priority Projects shall implement a single or combination of stormwater treatment BMPs that will remove anticipated pollutants of concern <u>from site runoff and achieve the appropriate standard</u>, as identified<u>specified in the Third Term Permits, as described</u> by the procedure in Section 7.II - 3.2, in-site runoff.3.2. Treatment Control BMPs must be implemented unless a waiver is granted to the project by the Permittee, based on the infeasibility of any Treatment Control BMP (see Section 7.II – 6.0).</p> <p>QUANTITY DESIGN STANDARD FOR TREATMENT CONTROL BMPs</p> <p>All Priority Projects shall design, construct and implement structural Treatment Control BMPs that meet the design standards of this section <u>and achieve the appropriate standard, as specified in the Third Term Permits</u>, unless specifically exempted by the limited exclusions listed at the end of this section or the project is participating in an acceptable regional or watershed management program. Structural Treatment Control BMPs required by this section shall be operational prior to the use of any dependent development, and shall be located and designed in accordance with the requirements here in this section.</p>
WQMP Page 7.II-35 Footnote	<p>This volume is not a single volume to be applied to all of Orange County. The size of the 85th percentile storm event is different for various parts of the County. The Permittees may calculate the 85th percentile storm event for each of their jurisdictions using local rain data pertinent to their particular jurisdiction (the 0.8-inch standard is a rough average for the County and should only be used where appropriate rain data is not available). In addition, isopleth maps may be used to extrapolate rainfall data to areas where insufficient data exists in order to determine the volume of the local 85th percentile. Data and procedures for determining an applicable 85th percentile, 24-hour storm event in such areas. Where the Permittees will use isopleth maps to determine the 85th percentile storm event in areas lacking rain data, the Permittees shall describe their method for using isopleth maps <u>are presented in their Local Implementation Plan prepared as Appendix Attachment A of the 2003 DAMP.</u></p>
WQMP Page 7.II-36	<p>If during the CEQA process a more refined evaluation of the project, <u>including comprehensive scientific and engineering studies</u>, identifies that impacts on receiving waters may not be significant and that the project will not cause further exceedance of water quality objectives related to the pollutant(s) for which the receiving water is impaired, the project shall not be required to use pollutants<u>pollutant</u>-specific treatment<u>Treatment Control</u> BMP(s) but may use any Treatment Control BMP or combination of stormwater Treatment Control BMPs that are designed to mitigate pollution. <u>In determining whether an impact is significant, the cumulative effects on the watershed must be considered. Where toxicity is causing an impairment and the cause of that toxicity is not clearly identified, Treatment Control BMP selection should be made in consultation with Regional Board Staff.</u></p>
WQMP Page 7.II-36	<p>3. Alternative stormwater Treatment Control BMPs not identified in Table 7.II-6 may be approved at the discretion of the Permittee, provided the alternative Treatment Control BMP is as effective in removal of pollutants of concern as other feasible BMPs listed in Table 7.II-6.</p>
WQMP Page 7.II-37	<p style="text-align: center;">Table 7-II-6 Treatment Control BMP Selection Matrix ⁽¹⁾</p>

Table 7.II-6		<table><tr><th>Pollutant of Concern</th><th colspan="6">Treatment Control BMP Categories</th></tr><tr><td>Sediment / Turbidity</td><td>Biofilters</td><td>Detention Basins ⁽²⁾</td><td>Infiltration Basins ⁽²³⁾</td><td>Wet Ponds or Wetlands</td><td>Filtration</td><td>H/M Hydrodynamic Separator ^(L for Turbidity)</td></tr><tr><td>Nutrients</td><td>L</td><td>H/M</td><td>H/M</td><td>H/M</td><td>H/M LM</td><td>L</td></tr><tr><td>Organic Compounds</td><td>U</td><td>U</td><td>U</td><td>U</td><td>H/M</td><td>L</td></tr><tr><td>Trash & Debris</td><td>L</td><td>H/M</td><td>U</td><td>U</td><td>H/M</td><td>H/M</td></tr><tr><td>Oxygen Demanding Substances</td><td>L</td><td>H/M</td><td>H/M</td><td>H/M</td><td>H/M</td><td>L</td></tr><tr><td>Bacteria & Viruses</td><td>U</td><td>U</td><td>H/M</td><td>U</td><td>H/M</td><td>L</td></tr><tr><td>Oil & Grease</td><td>H/M</td><td>H/M</td><td>U</td><td>U</td><td>H/M</td><td>L/M</td></tr><tr><td>Pesticides (non-soil bound)</td><td>U</td><td>U</td><td>U</td><td>U</td><td>U</td><td>L</td></tr><tr><td colspan="7">(1) Cooperative periodic performance assessment may be necessary. This Treatment Control BMP table will be updated as needed and as knowledge of stormwater treatment BMPs improves. (2) For detention basins with minimum 48-hour drawdown time. (23) Including trenches and porous pavement. (34) Also known as hydrodynamic devices and baffle boxes. L: Low removal efficiency H/M: High or medium removal efficiency U: Unknown removal efficiency Sources: Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters (1993), National Stormwater Best Management Practices Database (2001), and Guide for BMP Selection in Urban Developed Areas (2001).</td></tr></table>	Pollutant of Concern	Treatment Control BMP Categories						Sediment / Turbidity	Biofilters	Detention Basins ⁽²⁾	Infiltration Basins ⁽²³⁾	Wet Ponds or Wetlands	Filtration	H/M Hydrodynamic Separator ^(L for Turbidity)	Nutrients	L	H/M	H/M	H/M	H/M LM	L	Organic Compounds	U	U	U	U	H/M	L	Trash & Debris	L	H/M	U	U	H/M	H/M	Oxygen Demanding Substances	L	H/M	H/M	H/M	H/M	L	Bacteria & Viruses	U	U	H/M	U	H/M	L	Oil & Grease	H/M	H/M	U	U	H/M	L/M	Pesticides (non-soil bound)	U	U	U	U	U	L	(1) Cooperative periodic performance assessment may be necessary. This Treatment Control BMP table will be updated as needed and as knowledge of stormwater treatment BMPs improves. (2) For detention basins with minimum 48-hour drawdown time. (23) Including trenches and porous pavement. (34) Also known as hydrodynamic devices and baffle boxes. L: Low removal efficiency H/M: High or medium removal efficiency U: Unknown removal efficiency Sources: Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters (1993), National Stormwater Best Management Practices Database (2001), and Guide for BMP Selection in Urban Developed Areas (2001).						
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WQMP Page 7.II-38	<ul style="list-style-type: none">For some sites, it may be feasible to use detention basins to infiltrate additional runoff in a more compact area, but the designer must consider the potential for illegal disposal of chemical spills. Detention basins should not drain to, or be located near, work areas where wash-water or liquid wastes are generated efor where hazardous chemicals are stored. Detention basins should be clearly marked with “no dumping” signs and should be inspected regularly.																																																																							
WQMP Page 7.II-40	8. Infiltration structural Treatment Control BMPs shall not be used for areas of industrial or light industrial activity; areas subject to high vehicular traffic (25,000 or greater average daily traffic on main roadway or 15,000 or more average daily traffic on any intersecting roadway) <u>unless a site specific evaluation is conducted</u> ; automotive repair shops; car washes; fleet or RV storage areas (bus, truck, etc.); nurseries; and other high threat to water quality land uses and activities as designated by each Permittee in their Local Implementation Plan (see Appendix A, 2003 DAMP).																																																																							
WQMP Page 7.II-40	7.II - 4.0 NON-PRIORITY PROJECTS Non-Priority Projects for new development or significant redevelopment covered under this program shall perform the following steps for Project WQMP preparation using a process similar to <u>that</u> described for Priority Projects:																																																																							

WQMP Page 7.II-40 to 41	<p>■ Consider<u>Incorporate</u> Site Design BMPs, <u>as appropriate</u>.</p> <p>All non-priority new development and significant redevelopment projects shall consider, and incorporate and implement Site Design BMPs, whereas determined applicable and feasible<u>to be appropriate</u> during the site planning and approval process. See Section 7.II-3.3.1 for details.</p>
WQMP Page 7.II-42	<p>In all instances, the project proponent shall provide proof of execution of a Permittee-approved method of maintenance, repair, and replacement (O&M Plan – See <u>DAMP Section 5.3</u>) before the issuance of construction approvals, permit closeout and issuance of certificates of use and occupancy. Permittees carrying out public projects that are not required to obtain permits shall be responsible for ensuring that a Permittee-approved method of stormwater BMP maintenance repair and replacement is executed prior to the completion of construction. For all properties, the verification mechanism will include the project proponent's signed statement, as part of the project application, accepting responsibility for all structural BMP maintenance, repair and replacement, until a Permittee-approved entity agrees to assume responsibility for structural BMP maintenance, repair and replacement or an alternative mechanism is approved by the Permittee regarding maintenance, repair and replacement of the structural BMP.</p>
WQMP Page 7.II-43	<p>7.II - 6.0 WAIVER OF STRUCTURAL TREATMENT BMP REQUIREMENTS</p> <p>Permittees may provide for a Priority Project to be waived from the requirement of implementing structural Treatment Control BMPs (see Section 7.II - 3) if infeasibility can be established. A Permittee shall only grant a waiver of infeasibility when all available structural treatment<u>Treatment Control</u> BMPs have been considered and rejected as infeasible. The burden of proof is on the project proponent to demonstrate that all available measures are infeasible. Permittees shall notify the Executive Officer of the appropriate Regional Board by Certified Mail (with Return Receipt) within five (5) days of<u>after</u> each waiver <u>is</u> issued and a copy of the waiver documentation shall include the name of the person granting each waiver and a copy of the Project WQMP.</p> <p>Waivers may only be granted for structural Treatment Control BMP and structural Treatment Control BMP sizing requirements. Priority Projects, whether or not granted a waiver, may not cause or contribute to an exceedance of water quality objectives. Pollutants in runoff from projects granted a waiver must still be reduced through the use of <u>applicable</u> Source Control <u>BMPs</u> and consideration of Site Design BMPs, <u>as appropriate, to achieve the appropriate standard, as specified in the Third Term Permits</u>.</p> <p>In considering a waiver the Permittees should review the CEQA documentation for the project to identify<u>determine</u> whether a significant unmitigatable<u>unmitigated</u> impact was identified that was <u>the</u> subject to<u>of</u> a statement of overriding considerations.</p>
WQMP Page 7.II-43	<p>Each Permittee that implements a waiver program may, at its option, also develop a WQMP waiver impact fee program to require project proponents who have received waivers to transfer the savings in cost, or a proportionate share thereof, as determined by the Permittee, to a stormwater mitigation fund. Each Permittee shall notify the Regional Board if a<u>when its</u> WQMP waiver impact fee program is developed pursuant to this Model WQMP. Further, details for any WQMP waiver impact fee program may be set out in the Local Implementation Plan (DAMP Appendix A), or in supplemental submissions if multiple Permittees establish a joint mitigation fund program for a region or watershed.</p>

WQMP Attachment A Page 7.II-45	Unlike flood control measures that are designed to handle peak flows flow rates , stormwater Treatment Control BMPs are designed to treat the more frequent, lower-flow rate storm events, or the first flush portions of runoff from larger storm events (typically referred to as the first-flush events). Small, frequent storm events represent most of the total average annual rainfall for the area. The flow rate and volume from such small events is targeted for treatment.
WQMP Attachment A Page 7.II-45	<p>Hydrology/Hydraulics</p> <p>The methods presented in this appendix are intended to be used for sizing of project-based treatment control BMPs in Project WQMPs, or determining the required SQDV or SQDF contribution from an individual project in allocating capacity in a regional or watershed BMP program. Methods for estimating hydrology from larger watershed for the sizing of regional or watershed BMPs that address larger areas may require alternative approaches for determining appropriate sizing of BMPs.</p> <p>Hydrologic calculations for determining peak design storm flows in Orange County shall be in accordance with the latest edition of the Orange County Hydrology Manual produced in January 1986, together with the procedure set forth herein. Where jurisdictions within Orange County have approved alternative hydrologic calculation methods, the alternative methods may be utilized if they have been approved by the jurisdiction for use in design of flow-based stormwater quality BMPs.</p> <p>The Orange County Hydrology Manual requires that storm drains with tributary areas of less than 640 acres be designed for a minimum of 10-year frequency below the top of the curb elevation using a combination of street and storm drain flow. In sump conditions, catch basin and connecting storm drains must be designed to a 25-year frequency. Habitable structures shall have 100-year flood protection.</p>
WQMP Attachment A Page 7.II-45	The Stormwater Quality Design Flow (SQDF) is defined by the Permits as the maximum flow rate of runoff produced from a rainfall intensity of 0.2-inch of rainfall per hour. ⁸
WQMP Attachment A Page 7.II-45	2. Calculate the peak rate stormwater quality design flow for the site (or each sub-drainage area that will discharge to a separate BMP) produced by 0.2-inch/hour rainfall by using the rational method equation:
WQMP Attachment A Page 7.II-45	<p>Note: An alternate but less conservative method of computing the peak rate stormwater quality design flow ($Q_{P, SQDF}$) is to use the formula given in section D.6 of the Orange County Hydrology Manual, for I less than or equal than the lowest infiltration rate F_p for soil group D. This formula is:</p> $Q_{P, SQDF} = 0.90 * a_i * I * A$ <p>Where:</p> <p>a_i = ratio of impervious area to total area (decimal fraction)</p>
WQMP Attachment A Page 7.II-47	i. The volume of runoff produced from a 24-hour 85th percentile storm event, as determined from the local historical rainfall record (0.8 inch approximate average for the Orange County area) ⁹ ; or
WQMP	Data and procedures for determining an applicable 85th percentile, 24-hour storm event are presented in Table A-2 and Figure A-1. Rainfall

Attachment A Page 7.II-47 to 48	depths for the 85th percentile 24-hour event have been calculated for a number of stations throughout Orange County as shown in Table A-2. Approximate contour lines of the 85th percentile depth have been developed based upon the data as shown in Figure A-1. Projects should use the 85th percentile value from the rainfall zone in which the project site is located.
WQMP Attachment A Page 7.II-47 Footnote	This volume is not a single volume to be applied to all of Orange County. The size of the 85th percentile storm event is different for various parts of the County. The Permittees are encouraged to calculate the 85th percentile storm event for each of their jurisdictions using local rain data pertinent to their particular jurisdiction (the 0.8 inch standard is a rough average for the County and should only be used where appropriate rain data is not available). In addition, isopluvial maps may be used to extrapolate rainfall data to areas where insufficient data exists in order to determine the volume of the local 85th percentile storm event in such areas. Where the Permittees will use isopluvial maps to determine the 85th percentile storm event in areas lacking rain data, the Permittees shall describe their method for using isopluvial maps in the model and local WQMPs.
WQMP Attachment A Page 7.II-50	<p>The project used to demonstrate the calculations has the following characteristics:</p> <ul style="list-style-type: none"> ■ Located in the City of Irvine ■ 400 ft above sea level ■ Total project area, A_t, is 10 acres ■ Impervious area, A_i, is 6 acres <p>Method (I):</p> <p>The volume of runoff produced from a 24-hour 85th percentile storm event, as determined from the local historical rainfall record (0.8 inch approximate average for the Orange County area below elevation of 1,000 feet and 0.95 in for projects above 1,000 feet elevation). The procedure is as follows:</p>
WQMP Attachment A Page 7.II-50	<p>Use 0.75 inch based on the project location and Figure A-1.</p> <p>Use 0.80 inch for projects with 1,000 ft or less in elevation.</p> <p>Use 0.95 inch for projects with 1,000 ft or more in elevation.</p>
WQMP Attachment A Page 7.II-50	<i>Example Use of Unit Basin Storage Volume Curves Runoff from 85th Percentile Storm Event for Sizing a Dry Detention Basin</i>
WQMP Attachment A Page 7.II-50	$V_b = 0.60 * (\del{0.80}{0.75} \text{ in}) * (10 \text{ ac}) * (1 \text{ ft}/12 \text{ in}) * (43,560 \text{ ft}^2/\text{acre})$
WQMP Attachment A Page 7.II-50	<p>Size the BMP for $V_b = \del{17,424}{16,335} \text{ ft}^3$ and a minimum 48-hr drawdown</p> <p>Note that this result is greater than that calculated using the 80% annual capture volume approach below (Method (iii)). This is in part because the capture volume method is based on a continuous simulation model using actual rainfall data and accounts for drawdown affects in the detention basin.</p>
WQMP Attachment A Page 7.II-51	Note that this result is greater than that calculated using the 80% annual capture volume approach below (Method (iii)). This is in part because the capture volume method is based on a continuous simulation model using actual rainfall data and accounts for drawdown affects in the detention basin.
WQMP	3. <i>Find the Unit Basin Storage Volume.</i> ¹¹

Attachment A Page 7.II-52	<p>Use Figure A-1 for projects with elevations less than 1,000 ft.</p> <p><u>Obtain hourly rainfall data for the closest rain gage and develop capture curves using the Unit Basin Storage Volume method. Example storage curves have been developed using data from the Laguna Beach rain gage and the Silverado Ranger Station as shown in Figures A-2 and A-3.</u></p> <p>Use Figure A-2 for projects with 1,000 ft or more in elevation. Enter Figure A-1 or A-23 on the vertical axis at 80% Annual Capture for projects in the Santa Ana Regional Board region or 90% Annual Capture for projects in the San Diego Regional Board region.</p>
WQMP Attachment A Page 7.II-52	<p>Figure A-3 provides a direct reading of Unit Basin Storage Volumes required for 80% (Santa Ana Regional Board region) and 90% (San Diego Regional Board region) annual capture of runoff for values of "C" determined in Step 2 for projects with elevations less than 1000 ft.</p>
WQMP Attachment A Page 7.II-52 to 53	<p>Figure A-4 provides a direct reading of Unit Basin Storage Volumes required for 80% (Santa Ana Regional Board region) and 90% (San Diego Regional Board region) annual capture of runoff for values of "C" determined in Step 2 for projects with elevations 1000 ft or higher <u>using the Laguna Beach rain gage.</u></p> <p><u>Figure A-5 provides a direct reading of Unit Basin Storage Volumes required for 80% (Santa Ana Regional Board region) and 90% (San Diego Regional Board region) annual capture of runoff for values of "C" determined in Step 2 using the Silverado Ranger Station gage..</u></p> <p>Enter the vertical axis of Figure A-34 (or Figure A-45) with the "C" value from Step 2. Move horizontally across the figure until the line is intercepted. Move vertically down the figure from this point until the horizontal axis is intercepted. Read the Unit Basin Storage Volume along the horizontal axis.</p>
WQMP Attachment A Page 7.II-53	<p>Use Figure A-34, and the line that provides a direct reading of Unit Basin Storage Volumes required for 80% (Santa Ana Regional Board region) annual capture of runoff for values of "C" determined from Table A-1, and 2, for projects with elevations less than 1000 ft <u>the Laguna Beach rain gage.</u></p> <p>Enter the vertical axis of Figure A-34 with C = 0.60. Move horizontally across the figure until the line is intercepted. Move vertically down the figure from this point until the horizontal axis is intercepted. Read the Unit Basin Storage Volume (V_u) along the horizontal axis.</p>
WQMP Attachment A Page 7.II-58	<p>Peak Design Storm Hydrology</p> <p><u>While the treatment control BMPs must be designed to function at full treatment effectiveness up to SQDF or SQDV in accordance with accepted design practices, drainage systems must also be designed to safely pass the peak design storm flows. This can be accomplished either by designing the drainage system such that higher flows or runoff volumes that exceed the SQDF or SQDV bypass the treatment control BMP ("off-line"), or by designing the BMP to safely pass the peak design flow without impacting the treatment effectiveness for the lower flow rates ("in-line").</u></p> <p><u>While the treatment control BMPs must be designed to function at full treatment effectiveness up to SQDF or SQDV in accordance with accepted design practices, drainage systems must also be designed to safely pass the peak design storm flows. This can be accomplished either by designing the drainage system such that higher flows or runoff volumes that exceed the SQDF or SQDV bypass the treatment control BMP ("off-</u></p>

	<p><u>line”), or by designing the BMP to safely pass the peak design flow without impacting the treatment effectiveness for the lower flow rates (“in-line”).</u></p> <p><u>Hydrologic calculations for determining peak design storm flows in Orange County shall be in accordance with the latest edition of the Orange County Hydrology Manual produced in January 1986, together with the procedure set forth herein. Where jurisdictions within Orange County have approved alternative hydrologic calculation methods, the alternative methods may be utilized if they have been approved by the jurisdiction for use in design of flow rate-based stormwater quality BMPs.</u></p>
WQMP Attachment E Page 7.II-98	<p>“Project Feature” means a project component or subpart that in and of itself, meets priority project<u>Priority Project</u> criteria. For example, a greater than 5000 sq. ft. parking lot within a non-priority<u>Priority project</u><u>Project</u>.</p>
WQMP Attachment E Page 7.II-99	<p>“Significant Redevelopment” means development that would create or add at least 5,000 square feet of impervious surfaces on an already developed site. Significant redevelopment includes, but is not limited to: the expansion of a building footprint; addition to or replacement of a structure; replacement of an impervious surface that is not part of a routine maintenance activity; land disturbing activities related with structural or impervious surfaces and new sidewalk construction, pedestrian ramps, or bike lane on public and private existing roads;. Replacement of impervious surfaces includes any activity that is not part of a routine maintenance activity where impervious material(s) are removed, exposing underlying soil during construction. Significant redevelopment does not include trenching and resurfacing associated with utility work; resurfacing and reconfiguring surface parking lots (if no additional impervious area is added); pedestrian ramps and<u>ramps and</u> replacement of damaged pavement.</p>